JTEG

Integrity - Service - Excellence

Engineering Technical Mgmt Technology Transition Modernization

Mr. Mike McMillan

HQ AFMC/ENB

DSN 787-6484

michael.mcmillan@wpafb.af.mil

U.S. AIR FORCE

U.S. AIR FORCE

Purpose

- Present the Technology Transition process
- Current involvement of the E&TM community in this process
- Recommendations for expanded involvement

U.S. AIR FORCE

DEFINITIONS

- **Technology Transition**
  - **Transition of technology from one acquisition phase to another, specifically from the sponsoring laboratory to the recipient (AFMCI 61-102)**
  - **Ultimately successful upon incorporation into system.**
  - **Considered occurring through:**
    - **Technology Demonstration (laboratory responsibility)**
    - **Technology Application (user responsibility)**
  - **AF technology developed and refined in 3 distinct phases:**
    - **Basic research**
    - **Exploratory development**
    - **Advanced technology development (ATD).**

U.S. AIR FORCE

DEFINITIONS (Con't)

- **Technology Transfer**
  - Introducing New Mature Technologies to Industry, Academia or Other Government Agencies Outside of the Air Force (e.g., Radar on School Buses, Composite Technology)
- **Technology Insertion**
  - Acquiring and Implementing "Off the Shelf" Technology (e.g., Electronics/Computer Equipment, Composite Fab.)
- **Advanced Technology Demonstration (ATD)**
  - A Laboratory Project in a 6.3 funded Program With the Specific Objective of Meeting the Users' Defined Needs Through Risk Reducing "Proof of Principle" Demonstrations Conducted at the Subsystems or Higher Level in an Operationally Realistic Environment

U.S. AIR FORCE

DEFINITIONS (Con't)

- **Advanced Concept Technology Demonstration (ACTD)**
  - **A Joint Effort by the Acquisition and Operational (Warfighter) Communities Within the DoD by Identifying Significant Needs, and Matching Them With Mature Technology Programs Ready to Focus on a Military Application**

- **Engineering Validation**
  - **The Output of a Process Which Results in Confirmation by a Panel of Experienced Engineers (Should Include Industry) That a Given Technology is Suitable for Further Refinement, Application, or Use at Acceptable Risk as Documented in a Technology Summary**

- **Technology Summary (TS)**
  - **A Description of an Engineering Validated or Single Manager Technology That States the Level of Maturity Achieved During the Laboratory or Center Development; It Informs Potential Users of Transition Risks to be Considered at the Time of Refinement or Application**

U.S. AIR FORCE

WHO IS INVOLVED

- Technical Planning Integrated Product Teams (TPIPTs)
- S&T Laboratories (AFRL)
- Product Center System Program Offices (SPOs)
- Product Center "Grey Beard" Engineering Staffs
- Modernization Planners
- Technology and Industrial (TI) Engineers at the ALCs
- Senior Management
- Managers and Engineers at All MAJCOMs
- Other DoD Agencies (ARMY, NAVY, NASA, DARPA, etc.)
- Private Industry
- Academia

U.S. AIR FORCE

PROCESS EVOLUTION

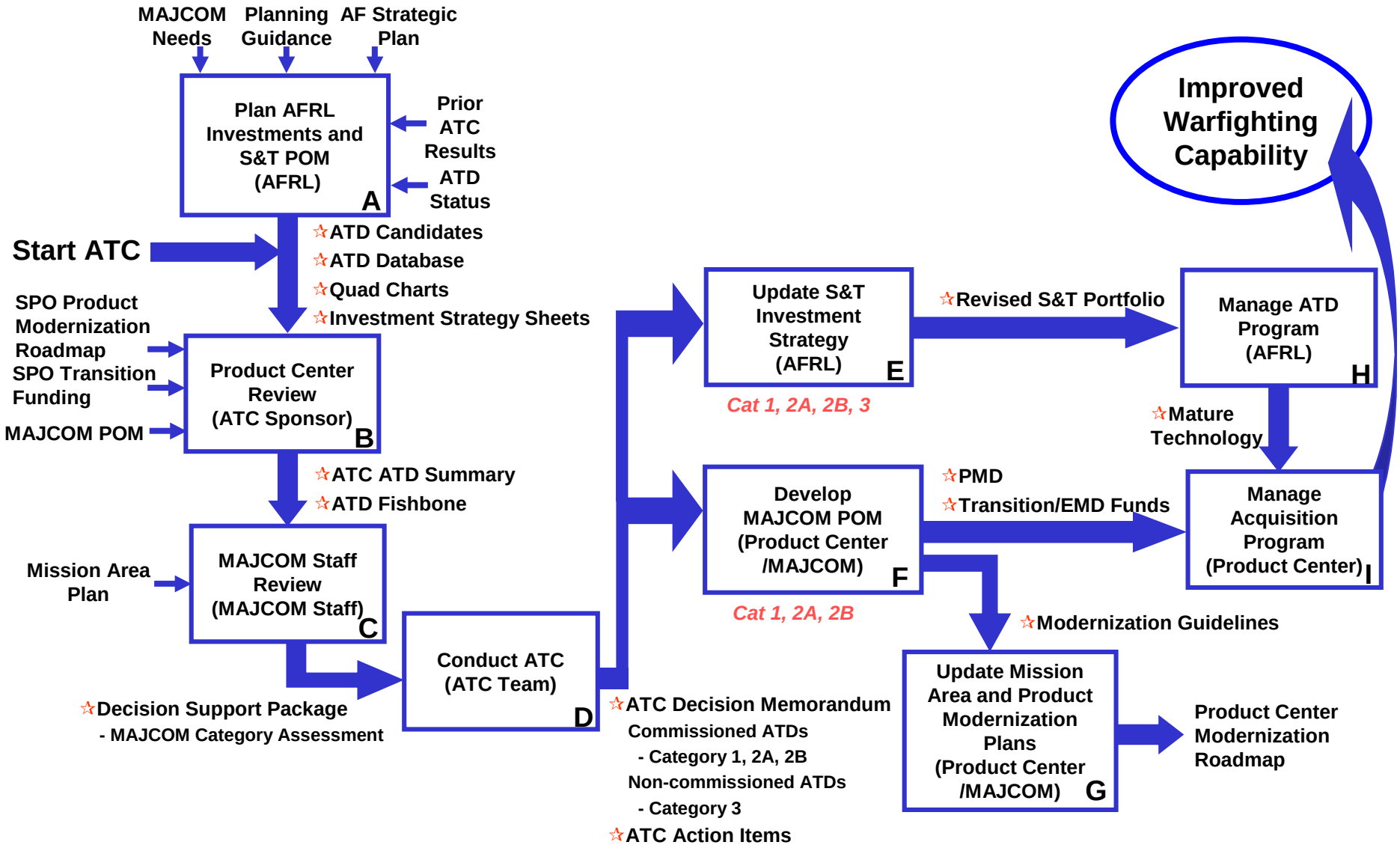
JTEG March 01

- AF Modernization Planning Process (MPP)
  - AF Strategic Plan
  - Modernization and Planning Steering Group
- Ad Hoc with Lab, MAJCOMs, Center XP/XR
- Technology Transition Plans
- Applied Technology Councils
  - MAJCOM, Lab, Lead Center
  - Advanced Technology Transition Council (ATTC)
    - SES Level, ASC Only
  - Advanced Technology Transition Process (ATTP)
  - Senior Laboratory and Engineer Level
    - HQ AFMC/ENBA Participation
    - Similar Processes Under Development at ESC, SMC and AAC
- Air Logistics Center TIs
- Innovation Transition (AC2ISRC)

U.S. AIR FORCE

Technology Transition Process

JTEG March 01



AFRL POM
S&T Budget

MAJCOM POM
Program Budget

6.1	6.2	6.3	6.4	6.5

Applied Technology Council (ATC)

Lab	Product Center	MAJCOM	Council
AFRL	ASC/CC	ACC/CV	#1
	ESC/CC	AC2ISR/CC	#2
	SMC/CC	AFSOC/CC	#3
	AAC/CC	AMC/CV	#4
		AFSPACE/CV	#5

- Investment Guidance
- Commission ATDs
- Ensure Tech Transition

U.S. AIR FORCE

ATC ROUND 1

JTEG March 01

MAJCOM	Lab	Lead Center	Other Center
ACC	AFRL	ASC	ESC
			AAC
AC2ISRC	AFRL	ESC	ASC
			SMC
AFSOC	AFRL	ASC	ESC
			AAC
AMC	AFRL	ASC	ESC
AFSPACE	AFRL	SMC	ESC
			ASC

U.S. AIR FORCE

ATC ROUND 2

JTEG March 01

MAJCOM	Lab	Lead Center	Other Center
AFMC	AFRL	ASC	
AMC	AFRL	ASC	ESC & SMC
ACC	AFRL	ASC	ESC &AAC
AC2ISRC	AFRL	ESC	ASC &SMC
AFSOC	AFRL	ASC	ESC &AAC
AFSPC	AFRL	SMC	ESC &ASC

U.S. AIR FORCE

ATC Categories for ATDs

ATD Categories	Action
Category 1: - Warfighter supports and has POM'd for transition (6.4 and beyond)	Continue ATD
Category 2A: - Warfighter committed to work in FY02 POM cycle	Continue ATD Until Next ATC
Category 2B: - Warfighter supports but is unable to POM for transition	Continue ATD Until Next ATC - Potential Source for S&T Shortfalls
Category 3: - Warfighter does not support	Do not establish as ATD. Potential source for other S&T programs. Continue technology maturation at TEO discretion

U.S. AIR FORCE

ATC RESULTS

- AFMC (4 Cat 1)
  - Bonded Repair Capability Enhancements
  - Corrosion Effects on Structural Integrity
  - Advanced Aircraft Corrosion Protection
  - Advanced Non-destructive Evaluation (NDE) for Aging Systems
- ACC (7 Cat 1, 2 Cat 2A, 10 Cat 2B)
  - Advanced Laser Eye Protection (ALEP)
  - Advanced SEAD Targeting (AT3)
  - Enhanced Recog and Sensing IadaR (ERASER)
  - EO Target Detect, Loc, Non-Coop ID (JOANNA)
  - AFTE F119 Upgrade
  - Next Generation Transparency
  - ATFE F120 Upgrade

U.S. AIR FORCE

ATC RESULTS (cont.)

- AMC (4 Cat 2A)
- AFSOC (3 Cat 2A, 1 Cat 2B)
- AC2ISRC (5 Cat 1, 11 Cat 2A, 2 Cat 2B)
  - MTI Exploitation Tools
  - Multi-Domain Network
  - Cognitive Desktop Info Manager
  - Distributed Analysis and Decision Support
  - Intermediate Text Exploitation (ITEA)
- AFSPC (5 Cat 1, 6 Cat 2B)
  - Advanced Multijunction Solar Cells
  - EELV Secondary Payload Adapter (ESPA)
  - High Performance LWIR for Space Sensors
  - Improved Space Computer Program
  - Warfighter 1

U.S. AIR FORCE

ISSUES

JTEG March 01

- **Funding Shortfalls**
- **Human Resources Shortfalls In Laboratories**
- **MAJCOM Involvement/Participation is Improving**
- **Many ATDs Have No Corresponding 6.4 Money in User POMs (6.3 and 6.4 Streams Decoupled)**
- **Guidance is Very Outdated (AFPD 61-1 Aug 93, AFI 61-105 Jul 94, AFMCI 61-102 Mar 95)**

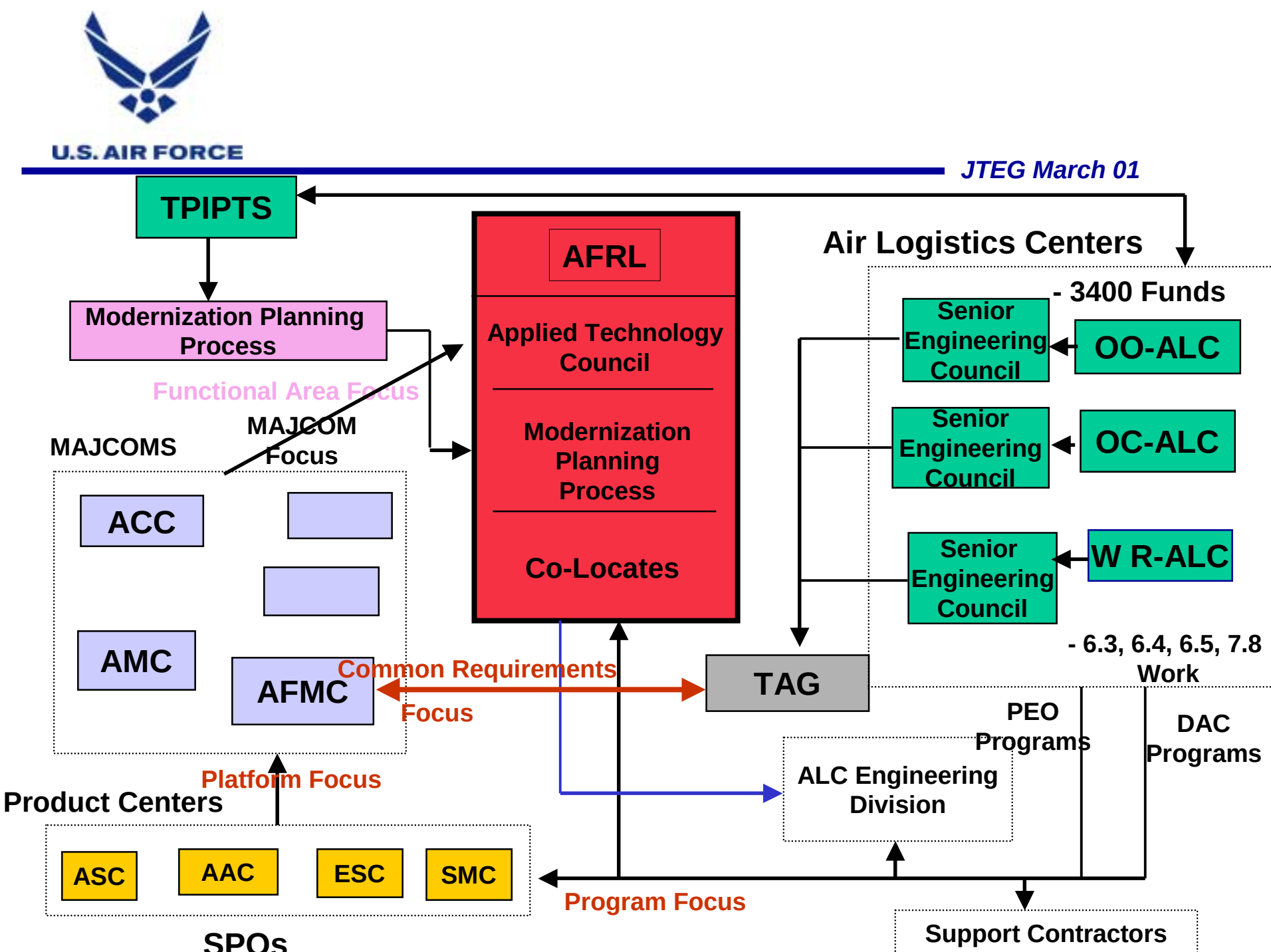
U.S. AIR FORCE

RECOMMENDATIONS

- **HQ AFMC/EN develop Guidance for the E&TM Community to Insure Involvement with Risk Management, Engineering Validation, Planning, and Maturity of Technology in the Late 6.2 and Throughout the 6.3 Funding Phases**

- **HQ AFMC/EN Participate in T2 Activities at all Centers and Track Results of the ATC Activities**

- **Establish a HQ AFMC Technology Transition Council Group (EN, LG, DO, DR, XP Three Letters) that Would Have Oversight Over Technology Transition at All of the Centers and Monitor User Requirements to Feed ATCs**


U.S. AIR FORCE
JTEG March 01
TPIPTS
Modernization Planning Process
Functional Area Focus
MAJCOM Focus
MAJCOMS
ACC
AMC
AFMC
AFRL
Applied Technology Council
Modernization Planning Process
Co-Locates
Air Logistics Centers
- 3400 Funds
Senior Engineering Council
OO-ALC
Senior Engineering Council
OC-ALC
Senior Engineering Council
W R-ALC
- 6.3, 6.4, 6.5, 7.8 Work
Common Requirements Focus
TAG
PEO Programs
DAC Programs
ALC Engineering Division
Platform Focus
Product Centers
ASC
AAC
ESC
SMC
Program Focus
SPOs
Support Contractors